Grid-Tie Solar Assessment
Health Centre, Mayne Island

Summary

The Health Centre south roof has excellent solar potential, with virtually no shading. This assessment proposes a 42 module, 11 kW system, producing 12,900 kWh annually (valued at $1,400/year if offsetting usage at $0.11 per kWh, re BC Hydro Rate 1300). Since the Health Centre's annual consumption is about 30,000 kWh, the solar contribution would be 43%. Installed cost is estimated at $31k ($2.85 per Watt) using Enphase microinverters.

South Roof



- roof faces 175º T (5º off true South)
- roof slope: 19º
- annual production: 12,900 kWh with 42 modules
- kWh/kWp ratio: 1157

Supporting Documents

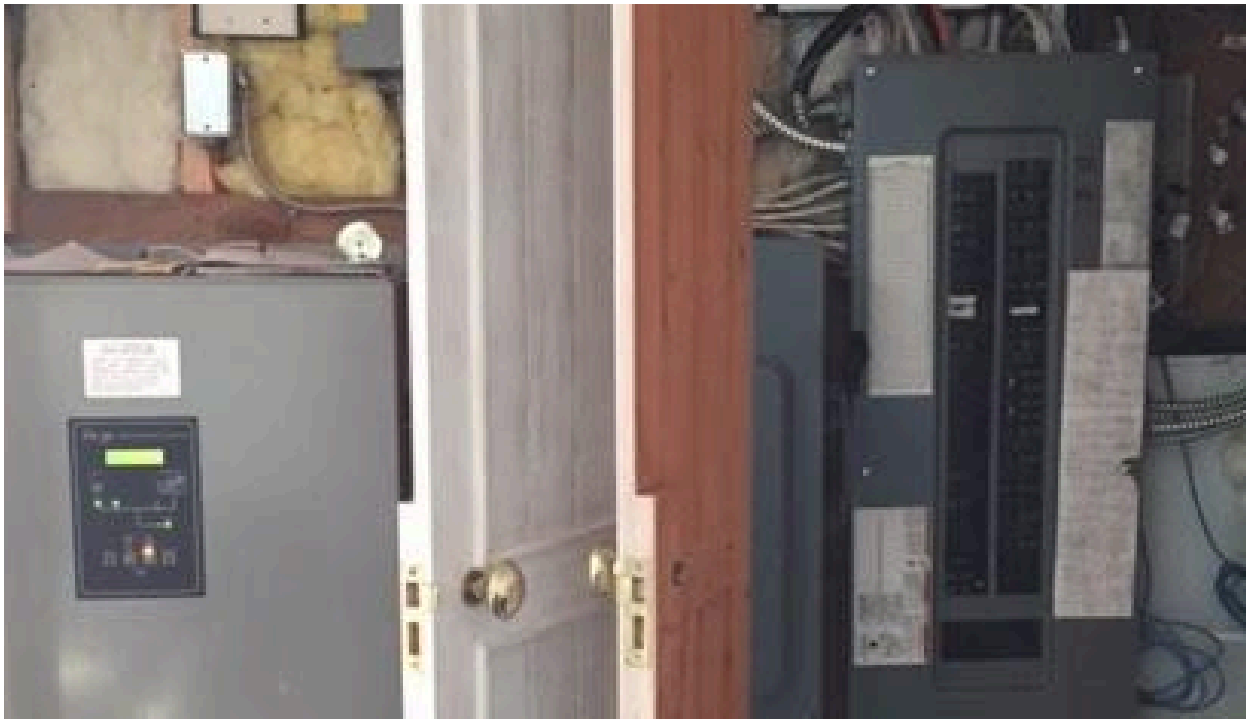
- Module layout and shade model: 3D, Line Drawing or Satellite
- HelioScope Production Report
- Single Line Diagram (electrical)
- All Photos

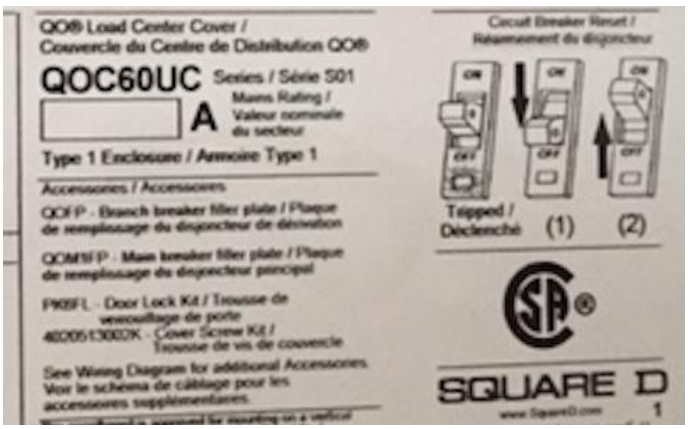
Notes

- modules mounted flat on rails on the roof (not tilted up)
- the electrical system is a standard 120/240 Volt split-phase ("single phase") supplied via a Square D panel (model QOC60UC) and a 200A main breaker
- solar breaker(s) must be installed at opposite end of panel from main breaker
- BC Hydro meter number: 5817843 (type P263)

- asphalt shingle roofing
- modules will be spaced around the two vent stacks in the East part of the roof
- This assessment assumes the Square D load centre has a 225 Amp bus, allowing three 20 Amp solar circuits. If it has a 200 Amp bus then only two 20 Amp circuits are allowed and the system would need to be decreased to 34 modules (max 17 modules per circuit with Enphase microinverters). There is an option for a larger installations with a line-side AC connection, in which case the East and West-facing roofs could be covered in modules as well.

Photos







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